



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/933,218	08/20/2001	Jeffrey S. Lille	SJO920000160US1	6404

7590 04/09/2004
Kunzler & Associates
8 East Broadway
Suite 600
Salt Lake City, UT 84111

EXAMINER

CHEN, TIANJIE

ART UNIT	PAPER NUMBER
----------	--------------

2652

DATE MAILED: 04/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/933,218

Applicant(s)

LILLE, JEFFREY S.

Examiner

Tianjie Chen

Art Unit

2652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 1-10 and 20-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 11-14 and 18 is/are rejected.
- 7) ☒ Claim(s) 15-17 and 19 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2</u> . | 6) <input type="checkbox"/> Other: ____. |

Art Unit: 2652

Non-Final Rejection

Election/Restrictions

1. Applicant's election with traverse of election of Group II claims 11-19 in Paper No. 6 is acknowledged. The traversal is on the ground(s) that the restriction does not meet the requirement. This is not found persuasive because at least the product in Group II can be made without the particular step of lithography recited in Group I; and Group I can be used for microactuating other than the particular purpose of tracking the centerline, and the method of Group III can be done without the particular lithography recited in Group I.

The requirement is still deemed proper and is therefore made FINAL.

Specification

2. The disclosure is objected to because of the following informalities:

- From line 28 of p.1 to line 2 of p. 2 should be deleted.
- The whole page of 22 should be deleted.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 11, 13, 14, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Ogawa et al (JP 4-221474A).

With regard to claim 11, Ogawa et al shows a micromechanical actuator in Figs. 1-8 for a storage device, including: a read/write slider 14; a movable member 13 (including 34 in Fig. 8) coupled with the read/write slider; and an electro-thermal actuator element 20 (including 35 in Fig. 8) in contact with the movable member, to effect relative positioning of the read/write slider.

With regard to claim 13, Ogawa et al further shows that the movable member comprises a freestanding structure attached at one end to the read/write slider.

With regard to claim 14, Ogawa et al further shows the movable member further comprises a proximal end and a distal end, the proximal end attached to the slider body and the distal end free-standing with respect to the slider body.

With regard to claim 18, Ogawa further shows that the electro-thermal actuator element further comprises an electro-thermal heater element 21 placed substantially on the movable member 34.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa et al in view of Chou et al (sensors and Actuators 75 (1999) 271-277).

With regard to claim 12, Ogawa et al shows a micromechanical actuator with a slider, but is silent of the material for the slider.

Chou et al shows a slider made of silicon rich nitride, which is etachable (p. 273 to p. 274).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to use the material taught by Chou et al for the slider in Ogawa et al's device. The rationale is as follows: Ogawa teaches a slider but is silent on the material. One of ordinary skill in the art would have been looking for the material for the slider. Chou teaches a material, which is also well known in the art for making slider. One of ordinary skill in the art would have been motivated to use this material in Ogawa et al's device. In such constructed device, the read/write slider comprises a reactive ion etchable material.

Allowable Subject Matter

5. Claims 15-17 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

- With regard to claim 15, as the closest reference, Ogawa et al (JP 4-221474 A) shows a micromechanical actuator having a movable member; but **fails to show** that the movable member further includes a tongue-shaped region etched out of a face of a body of the read/write slider.
- With regard to claim 16, as the closest reference, Ogawa et al (JP 4-221474 A) shows a micromechanical actuator having a movable member; but **fails to show that** the movable member further includes an integral, elongated portion of the slider body defined at the distal end by a leading edge of the slider body,

Art Unit: 2652

defined at a top end by the top of the slide body, defined at a bottom by a trench having the shape of a curved plane extending laterally through the slider body and extending from a first side member to a second side, the movable member attached at the proximal end to the slider body.

- With regard to claim 19, as the closest reference, Ogawa et al (JP 4-221474 A) shows a micromechanical actuator having a heater; but **fails to show that** the electro-thermal heater element comprises first and second leads extending in two substantially parallel directions on the movable member, the first lead extending along a first side of the movable member and the second lead extending along a second side of the movable member, the first lead being substantially narrower than the second lead such that passing a current through the electro-thermal heater element distorts the movable member to one side or the other in a selected manner depending upon the amount of current that is passed through the electro-thermal heater element.
- Applicant assumes that this device with these features would be capable of finely positioning slider of hard disk drive such that a read/write transducer can be quickly and accurately positioned over the centerline (Specification, p. 2, lines 17-19).

Conclusion

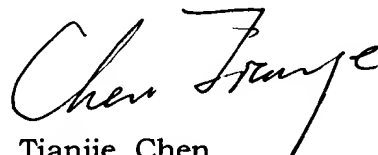
6. The prior art made of record innPTO-8923 Form and not relied upon is considered pertinent to applicant's disclosure.

Art Unit: 2652

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tianjie Chen whose telephone number is (703) 305-7499. The examiner can normally be reached on 8:00-4:30, Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tianjie Chen
Primary Examiner
Art Unit 2652
03/26/2004